

the swell 63. Since the Belleville spring 54 or the coil spring 59 serves to urge the movable cam member 53, 58 against the stationary cam member 52, 57, the swell 63 received in the depression 64 enables restriction to a relative rotation of the movable cam member 53, 58. This results in a clicking movement of the movable cam member 53, 58.

[0053] When the movable cam member 53, 58 rotates in response to the rotation of the display enclosure 16 or the bracket 32, as shown in FIG. 13, for example, the swell 63 of the stationary cam member 52, 57 slides along the first inclined surface 64a of the movable cam member 53, 58. The movable cam member 53, 58 is distanced from the stationary cam member 52, 57 in response to the rotation of the movable cam member 53, 58 based on the inclination of the first inclined surface 64a. Elastic force is thus stored up in the Belleville spring 54 or the coil spring 59 in response to the movement of the movable cam member 53, 58. The movable cam member 53, 58 is in this manner urged against the stationary cam member 52, 57. If restraint is released from the display enclosure 16 or the bracket 32 around the horizontal axis 23 or the vertical axis 24, the first inclined surface 64a develops a driving force in the reverse direction around the horizontal axis 23 or the vertical axis 24. The driving force is kept developed until the swell 63 is completely received in the depression 64. The display enclosure 16 is in this manner allowed to enjoy an elastic restriction to the movement around the horizontal or vertical axis 23, 24.

[0054] When the swell 63 of the stationary cam member 52, 57 reaches the second inclined surface 64b in the adjacent depression 64, as shown in FIG. 14, the inclination of the second inclined surface 64b allows the movable cam member 53, 58 to approach the stationary cam member 52, 57 during the rotation of the movable cam member 53, 58. In this case, the second inclined surface 64b develops a driving force acting on the movable cam member 53, 58 for rotation. If restraint is released from the display enclosure 16 or the bracket 32 around the horizontal axis 23 or the vertical axis 24, the movable cam member 53, 58, namely the display enclosure 16, is thus forced to rotate around the vertical or horizontal axis 24, 23 until the swell 63 is completely received in the depression 64. The movement of the swell 63 is restricted within the adjacent depressions 64, 64.

[0055] As shown in FIG. 15, a gap 65 may further be formed in the support shaft 28. The gap 65 is continuous with the inside space 31. The gap 65 serves to establish a wider opening of the first hollow space 34. The assembling of the coaxial cable 35 can thus be accomplished with a higher efficiency.

[0056] FIG. 16 schematically illustrates a swivel mechanism 22a according to a second embodiment of the present invention. The swivel mechanism 22a allows provision of the cam member 38 only on one of the support shafts 28. The cam member 38 may be coupled to the bearing 26 for immobility relative to the bearing 26 around the horizontal axis 23 with the assistance of the cam casing 61 in the manner as described above. The first hollow space 34 is defined in the other support shaft 28 as described above. The second hollow space 37 is defined in the tube 36. Like reference numerals are attached to structure or components equivalent to those of the aforementioned first embodiment.

[0057] FIG. 17 schematically illustrates a swivel mechanism 22b according to a third embodiment of the present

invention. The tube 36 is supported on the shaft member 27 or support member 29 for relative rotation around the vertical axis 24 in this swivel mechanism 22b. The tube 36, the sleeve 33, the movable cam member 53 and the bracket 32 are thus forced to rotate all together. The stationary cam member 52 may be coupled to the support member 29 for immobility relative to the support member 29 around the vertical axis 24. The first hollow space 34 is defined in the support shaft 28 in the same manner as described above. The second hollow space 37 is defined in the tube 36. Like reference numerals are attached to structure or components equivalent to those of the aforementioned first embodiment. The cam member 38 may be mounted only on one of the support shafts 28 in the swivel mechanism 22b in the same manner as the aforementioned second embodiment.

[0058] FIG. 18 schematically illustrates a swivel mechanism 22c according to a fourth embodiment of the present invention. The swivel mechanism 22c allows provision of the first rotation restriction mechanism 51 outside the sleeve 33. The first hollow space 34 is defined in the support shaft 28 in the same manner as described above. The second hollow space 37 is defined in the tube 36. Like reference numerals are attached to structure or components equivalent to those of the aforementioned first embodiment. The cam member 38 may be mounted only on one of the support shafts 28 in the swivel mechanism 22c in the same manner as the aforementioned second embodiment. The movable cam member 53, the sleeve 33 and the bracket 32 may be forced to rotate all together around the vertical axis 24. Otherwise, the tube 36 may also be forced to rotate around the vertical axis 24 along with the movable cam member 53, the sleeve 33 and the bracket 32.

What is claimed is:

1. A bi-axial swivel assembly comprising:

- a pair of coaxial bearings located at positions distanced from each other;
- a pair of support shafts respectively supported on the bearings for relative rotation;
- a first hollow space extending at least within one of the support shafts in an axial direction of the support shaft, said first hollow space penetrating through the bearing corresponding to the one of the support shafts;
- a support member interposed between the support shafts, said support member coupled with the support shafts based on integral formation;
- a tube supported on the support member, said tube extending along a rotation axis perpendicular to an imaginary plane including a longitudinal axis of the support shaft;
- a second hollow space extending within the tube in an axial direction of the tube, said second hollow space penetrating through at least the support member;
- a bracket supported on the tube for relative rotation around the rotation axis;
- a perpendicular surface defined on at least one of the bearings along an imaginary reference plane perpendicular to the longitudinal axis of the support shaft;
- a restriction cam coupled to the bracket, said restriction cam extending in a centrifugal direction of the rotation axis, said restriction cam lying inside the imaginary